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THE UNITED NATIONS ENVIRONMENT PROGRAMME

Overview Paper

ENVIRONMENTAL ASPECTS OF STRATOSPHERIC OZONE DEPLETION

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Summary

The report represents an overview of the natural and perturbed stratosphere and the impacts on man, the biosphere and climate. It is intended to provide a general background to the subject and does not deal specifically with research gaps, recommendations and organizational matters which are to be resolved by the ozone meeting.

It shows that ozone plays a fundamental role in the stable stratosphere. Its total amount varies over the globe by a factor of two and locally as much as 25 to 50 percent. Within the H-N-Cl systems and ozone photochemistry the nitrogen system modifies natural ozone destruction by as much as 70% and the chlorine system (CFM's) appears to be a significant factor in depletion of the ozone layer.

After a brief review of UV radiation and the impacts on man, plants, terrestrial animals and ecosystems, the socio-economic aspects of the problem are considered. Because the effects of ozone depletion are indirect and incompletely understood, it is suggested that benefits from control action are very difficult to assess whereas the relative costs of some alternative control actions can be assessed.

Finally the need for accelerated monitoring and research on all aspects of the ozone layer, including the human and biological impacts of UV-B are stressed.

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